DIABETES EVALUATION FRAMEWORK for INNOVATIVE NATIONAL EVALUATIONS

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DEFINE USER-GUIDE

Appendices

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http://www.tndms.ca/

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TABLE OF CONTENTS

Appendix 1: DEFINE Priority Multi-Level Indicator Set 4
Appendix 2: DEFINE All-inclusive Multi-level Indicator Set 5
Appendix 3: DEFINE Table of Associated Measurement Tools 6
Appendix 4 - Worksheet: Stakeholder List 25
Appendix 5 - Worksheet: Stakeholder Identification and Engagement 26
Appendix 6 - Worksheet: Understanding the Program 27
Appendix 7- Worksheet: Interactions and Causal Linkages 28
Appendix 8 - Worksheet: Developing a Logic Model 30
Appendix 9 - Worksheet: Evaluation Feasibility 32
Appendix 10- Worksheet: Expanding the Logic Model 33
Appendix 11- Worksheet: Dissemination Plan 34
Appendix 12- Worksheet: Knowledge Integration 36
Appendix 13 – PFH Logic Model 37
Appendix 14 – PFH Triangulation Matrix Example 38

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APPENDIX 1: DEFINE PRIORITY MULTI-LEVEL INDICATOR SET

Priority Multi-level Indicator Set: Critical indicators to inform policy and system performance or program impact that are feasible to measure

PATIENT LEVEL:

Health Status and Well-being		Health Behaviours	Personal Resources
•Glycemic control	•Organ dysfunction/disease	•Self-efficacy	•Education/literacy/enablement
•Hypoglycemia	•Mental health	•Self-care	•Social support/caregivers
•Anthropometric measures	•Functional capacity		•Employment / socio-economic/health insurance status
•Cholesterol/lipid profile	•Quality of life		
•Medication usage	•Patient experience		

HEALTHCARE DELIVERY LEVEL:

Self-Management Support:	Delivery System Design:	Provider Decision Support:	Clinical Information Systems:
•Patient-centered self-management action plans •Health promotion and education	•Effective and safe systems or structures •Focus on patient-centered care and patient interactions •Alignment of services and continuity of care	•Routine feedback reports •Evidence-based guidelines embedded into daily practice	•Systematic tracking clinic level data •Effective use of multi-functional electronic medical records •Access to health information - provider and patient portals

ORGANIZATION OF HEALTHCARE LEVEL:

•Effective organizational and funding structure (s)	•Accountability related to quality of care and system performance	•Health services utilization patterns •Accessible health services

ENVIRONMENT LEVEL:

•Political/leadership commitment to establishing healthy and equitable socioeconomic, living and working conditions particularly for people with low socio-economic status, aboriginal peoples, immigrants, etc.
•Existence of accessible system or structures (e.g. housing, transportation, justice, employment) that are stable, secure, safe, and patient-centered (i.e. stimulating, satisfying, and enjoyable)

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APPENDIX 2: DEFINE ALL-INCLUSIVE MULTI-LEVEL INDICATOR SET

PATIENT LEVEL: informed and activated patient to manage both the medical and non-medical determinants of health including health status and well-being, health behaviours, and personal resources

Health Status and Well-being

- Symptoms and clinical measures: **Glycemic control** (A1C); **Hypoglycemia**; Blood Pressure (Systolic and Diastolic); **Cholesterol/lipid profile** (LDL, TC:HDL-C); BMI; Medication Usage – OADs, insulin, statins, lipid-lowering medications, ACE/ARB's, other antihypertensives, anticoagulant therapy;
- Long-term Macrovascular Complications/Outcomes: Death rates, Cardiovascular Disease, Coronary Heart Disease/Ischemic Heart Disease, Congestive Heart Failure, Stroke/TIA, Peripheral Vascular Disease, Revascularization;
- Long-term Microvascular Complications: Retinopathy/blindness, Neuropathy (lower limb [foot] infections, ulcers, amputations);
- CKD: end stage renal disease, dialysis, kidney transplant; Autonomic neuropathy (i.e. gastroparesis); Mental health; Depression, Cancer; Dementia; Erectile dysfunction, Hospitalization
- **Quality of life** and **Functional capacity**
- **Patient experience**: accessibility, effectiveness, patient-centeredness, interaction with care team, treatment plan, living conditions, community actions, community structures and systems, public policies

Health Behaviours

- **Self-efficacy** and **Self-care**
- Recognizing own health status and personal goals
- Appropriate care utilization
- Working with care team to establish an appropriate treatment plan by identifying personal barriers, challenges, and preferences
- Adhering to treatment plan by attending planned visits/referral appointments/scheduled tests and/or taking medications
- Participate in educational activities
- Appropriate use of community structures and systems

Personal Resources

- **Education/literacy/enablement**
- **Social support/caregivers**
- Race and culture
- Belief system
- **Employment status/ socio-economic/health insurance status**
- Confidence in self-management
- Coping skills
- Empowerment

HEALTHCARE DELIVERY LEVEL: prepared and proactive care teams in all THREE CARE LOCALES (practice, community and hospital) delivering effective, safe, responsive/patient-centered and accessible care

Self-Management Support : oriented to enhancing patient knowledge, skills, and involvement.

- Documented assessment of health status, quality of life, health behaviours and lifestyle, personal resources, socio-economic status, race, and culture, and personal health goals
- Shared decision making between patient/caregiver and provider (e.g. clinical protocol or procedures, internal forms or instruments, documentation)
- **Patient-centered self-management action plans** to improve health status, enhance quality of life, reduce risk factors, and change health behaviours or lifestyle
- **Health promotion and education** such as smoking cessation programs, access to personal health information, self-management skills enhancement programs (e.g. glucose, monitoring, foot care, diet, exercise), and knowledge of diabetes and CPGs
- Provider satisfaction with interaction with the patient/caregiver
- Related patient-level indicators described in detail below (e.g. participation in programs, enablement, empowerment, active self-management practices, satisfaction)

Delivery System Design: oriented to maintaining or restoring health for individuals and groups

- Existence of accessible, **effective, and safe system or structures** (e.g. wait times)
- Application of evidence-based clinical processes and disease management (e.g. protocol/procedures/ strategies) including adherence to CDA CPGs related to the frequency of testing or doing exams for: A1C test; Blood pressure (systolic and diastolic) test; Cholesterol (LDL, TC:HDL-C) test; CKD (Serum Creatinine, Glomerular filtration rate, ACR) test; Electrocardiogram test; Foot exam; Eye exam, Neuropathy; Body mass index measurement; Waist circumference measurement; Depression screening
- Effective team structure, composition and function
- **Focus on patient-centered care and patient interactions** (i.e. patient is an active partner)
- Effective planned visits (individual and groups)
- Population level health promotion, disease prevention and disease detection such as programs targeting high risk individuals or sub-groups (e.g. poor, aboriginal, immigrant, etc.), reducing inequities in the risk of developing diabetes, strategies to facilitate early identification of undiagnosed diabetes
- **Alignment of services for ease of patient navigation and continuity of care**
- Commitment to quality improvement (e.g. QI committees/meetings/strategies) including practice re-design to improve effectiveness and efficiency
- Existence of relationships/partnerships with community members and other stakeholders to identify patient needs, build adequate knowledge and skills, contribute to creating proper conditions for health in society and advocates for public health policy
- Related patient-level indicators described in detail below (e.g. care utilization, adherence to treatment plan, health status – A1C, BP, LDL, macrovascular/ microvascular complications, medication usage, hospital visits/stays, patient experience/ satisfaction, etc.)

Provider Decision Support: oriented to improving the knowledge and skills of providers and administrators

- **Evidence-based guidelines (e.g. CPGs and strategies for being well and staying healthy) embedded into daily practice**
- Provider and administration education (e.g. programs available, program attendance, allocated time for professional development)
- Existence of relationships/partnerships among providers and administrators from the different locales of care (e.g. primary care, specialists, public health, community care)
- Clinical care and client management tools (e.g. flow sheets, registry, and patient assessment/ disease severity tools that link indicators with recommendations for treatment or health behaviour change strategies)
- **Routine feedback reports** regarding measurements, evaluation, performance

Clinical Information Systems: oriented to tracking, measuring, evaluating, and sharing health information

- Existence of a diabetes registry
- **Systematic tracking clinic level data**
- **Effective use of multi-functional electronic /medical /health record** such as: patient tracking (e.g. clinical data, demographics, personal resources, socio-economic status, race, and culture, etc.); embedded CPGs/proactive care/ system reminders (i.e. support for care delivery); severity indicators with recommendations for treatment; performance feedback; practice 'success'; future goals
- Patient treatment plans (e.g. plans that include self-management goals, clinical information, and appropriate next steps for follow-up)
- **Access to health information (e.g. provider portals, patient portals)**
- Linkages to support coordinated care and information exchange (e.g. allied provider access to patients' electronic charts)

ORGANIZATION OF HEALTHCARE LEVEL: healthcare system design and context that take into account the quality of care dimensions (effectiveness, safety, patient-centeredness, accessibility, efficiency and equity) and the determinants of health

- **Effective organizational and funding structures** (e.g. physical space, supplies, staffing, funding models, incentives, alignment/linkages among locales of healthcare delivery)
- Healthcare policies, by-laws, regulations
- Leadership commitment to chronic care approach (e.g. vision statements/mission statements/position papers, committees, management structures)
- Leadership commitment to quality improvement (e.g. vision statements/mission statements/position papers, committees, management structures)
- **Accountability related to quality of care and system performance** (Effectiveness, Safety, Patient-centeredness, **Accessibility**, Efficiency, and Equity)
- Burden of illness and **health services utilization patterns**

ENVIRONMENT LEVEL: prepared/proactive community partners and informed, activated communities to manage the non-medical determinants of health including socio economic, living, and working conditions, as well as the social and physical environment

Social and Physical Environment

- **Political/leadership commitment to establishing healthy and equitable socioeconomic, living and working conditions particularly among people with low socio-economic status, aboriginal peoples, immigrants, etc.**
- **Existence of accessible system or structures (e.g. housing, transportation, justice, employment) that are stable, secure, safe, and patient-centered (i.e. stimulating, satisfying, and enjoyable)**
- Use of the system or structures (effectiveness)
- Existence of relationships/partnerships among structures for continuity of care (e.g. linkages among community members/stakeholders and leaders/providers in healthcare)
- Cost-effectiveness

Community Action

- Knowledge and identification of risk behaviours and environmental (living and working) conditions
- Community mobilization/public participation (e.g. shared vision, consensus at community level, community action) in activities to control non-medical factors that influence health
- Existence of relationships/partnerships among community members/stakeholders (e.g. municipalities, advocacy groups, recreation centres, service clubs) and leaders/providers in healthcare, research, education, and other relevant realms to identify patient needs and build adequate knowledge and skills
- Knowledge, skills and resources to participate in community action
- Sense of empowerment in developing and implementing activities to manage the health of the community

Public Policy

- Existence of organizational and governmental policies and legislation that foster greater equity related to safer and healthier goods, services, and environments (e.g. dietary guidelines, reduced pricing for whole wheat products and fruits, government funded programs)
- Evidence of community advocacy effort to develop new organizational and governmental policies and legislation in non-healthcare areas (housing, transportation and food distribution, education, employment, justice) that will enhance the health of the community (e.g. expert panels)

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APPENDIX 3: DEFINE TABLE OF ASSOCIATED MEASUREMENT TOOLS

The **Table of Associated Measurement Tools** provides a list of existing measurements tools or instruments that could be considered when developing your evaluation plan. The tools/instruments are aligned with the DEFINE multi-level indicator sets. This table can help you select instruments that complement your data acquisition requirements. Remember that there are other important methodologies to think about that are not captured in this table (i.e. qualitative data, administrative data and patient chart data).

With new measurement tools constantly under development, we encourage you to conduct your own search before making the final selection of measurement tools for your evaluation. If you find useful tools, please consider contacting us so we can add them to the table. We would love to hear from you!

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
PATIENT LEVEL: informed and activated patient to manage both the medical and non-medical determinants of health including health status and well-being, health behaviours, and personal resources	
Health Status and Well-being	
Priority Multi-level Indicator Set **1. Glycemic control** **2. Hypoglycemia** **3. Anthropometric measures** **4. Cholesterol/lipid profile** **5. Medication usage** **6. Organ specific dysfunction/disease** **7. Mental health** **8. Functional capacity** **9. Quality of life**	• **Problem Areas in Diabetes (PAID)** [31,32] [33]; **Short-form PAID** [34,35] [36] A valid 20-item tool to measure of emotional functioning in diabetes for use by providers with their patients to support change in patient self-care. Shorter versions of the tool, PAID-5 and PAID-1, have good reliability and validity. • **RAND Health Survey** [37-39] **1.0 Questionnaire** This 36-item health status inventory includes 8 scales and provides 2 summary scores (physical and mental health). **RAND 20-Item Short Form Survey (SF-20)** Developed from the Medical Outcomes Study, this short-form 20—item survey

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
10. Patient experience **All Indicators:** • Symptoms and clinical measures: Glycemic control (A1C); Hypoglycemia; Blood Pressure (Systolic and Diastolic); Cholesterol/lipid profile (LDL, TC:HDL-C); BMI; Medication Usage – OADs, insulin, statins, lipid-lowering medications, ACE/ARB's, other antihypertensives, anticoagulant therapy; • Long-term Macrovascular Complications/Outcomes: Death rates, Cardiovascular Disease, Coronary Heart Disease/Ischemic Heart Disease, Congestive Heart Failure, Stroke/TIA, Peripheral Vascular Disease, Revascularization; Long-term Microvascular Complications: Retinopathy/blindness, Neuropathy (lower limb [foot] infections, ulcers, amputations); • CKD: end stage renal disease, dialysis, kidney transplant; Autonomic neuropathy (i.e. gastroparesis); Mental health; Depression, Cancer; Dementia; Erectile dysfunction, Hospitalization • Quality of life and Functional capacity • Patient experience: accessibility, effectiveness, patient-centeredness, interaction with care team, treatment plan, living conditions, community actions, community structures and systems, public policies	measures 6 important health concepts: physical functioning (6), role functioning (2), social functioning (1), mental health (5) current health perceptions (5) and pain (1). **RAND 12-Item Short Form Survey; Veterans RAND 12-item Health Survey (VR-12)** [40] Developed from the Medical Outcomes Study, this short-form 12-item survey instrument is designed to reduce respondent burden and achieves minimum standards of precision for group comparisons focusing on physical and mental health.
	• **Diabetes Foot Self-care Behaviour Scale (DFSBS)** [41] A valid and reliable 7-item scale to assess foot care behaviours.
	• **Quality of Life Scale (QOL)** [42] A valid and reliable 16-item QOLS assessment tool that measures domains; relationships and material well-being; health and functioning; personal, social and community commitment and has been used with diverse patient groups and cultural groups with chronic disease.
	• **Diabetes Quality of Life Scale (DQOLS) – Type 1 Diabetes** [43,44] A valid and reliable 44-item tool that measures diabetes-specific burdens: social relations, physical complaints, worries about the future, leisure time flexibility, diet restrictions, and daily hassles.
	• **EuroQol: EQ-5D™** [45] A standardized instrument for use as a measure of health outcome. Available on EuroQol website: http://www.euroqol.org/about-eq-5d.html
	• **PHQ-9 (also PHQ-15)** [46,47]

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
	A validated self-report depression instrument validated as a multi-purpose diagnostic, severity and outcome measure.
	• **WHO-5 Well Being Index** [48] A brief psychometrically sound measure of emotional well-being for use as a screening test for likely depression in outpatients with diabetes.
	• **Patient's Evaluations of the Quality of Diabetes Care (PEQD)** [54-56] A valid and reliable 14-item instrument to assess the patients' judgement on the quality of their diabetes care by providers, such as wait times, information shared and support provided.
	• **Self-Efficacy for Managing Chronic Disease 6-item Scale** [51,52] A 6-item tool to measure patient confidence in doing certain activities.
Health Behaviours	
Priority Multi-level Indicator Set **11. Self-efficacy** **12. Self-care**	• **Patient Activation Measure (PAM)** [49] A valid, reliable 22 – item scale that reflects a developmental model of activation in four stages: patient starting to take a role (2), building knowledge and confidence (10), taking action (6), maintaining behaviours (4).
All Indicators • Self-efficacy and Self-care • Recognizing own health status and personal goals • Appropriate care utilization	• **Patient Self-assessment Score for Diabetes Risk** [50] A diabetes screening tool using 6 health related questions on age, gender, family history, blood pressure, weight and physical activity.
	• **Self-Efficacy for Managing Chronic Disease 6-item Scale** [51,52] A 6-item tool to measure patient confidence in doing certain activities.

<u>Priority</u> and <u>All-inclusive</u> Multi-level Indicator Sets	**Measurement Tool**
• Working with care team to establish an appropriate treatment plan by identifying personal barriers, challenges, and preferences • Adhering to treatment plan by attending planned visits/referral appointments/scheduled tests and/or taking medications • Participate in educational activities • Appropriate use of community structures and systems	
	• **Diabetes Quality of Life Scale (DQOLS) – Type 1 Diabetes** [43,44] A valid and reliable 44-item tool to measure diabetes-specific burdens: social relations, physical complaints, worries about the future, leisure time flexibility, diet restrictions, and daily hassles.
	• **The Diabetes Empowerment Scale (DES)**[18]**; (DES-SF)**[19] A valid and reliable measure (28-items) of diabetes-related psychosocial self-efficacy: managing the psychosocial aspects of diabetes, assessing dissatisfaction and readiness to change, and setting and achieving diabetes goals. Also available is an 8-item short-form that is a valid and reliable measure of overall diabetes-related psychosocial self-efficacy.
	• **Patient Enablement Instrument** [53] A valid 6-item questionnaire focusing on patient issues regarding ability to cope, understand and confidence in managing health.
	• **Self-Care Inventory (SCI) – type 1 diabetes children and adolescents** [20] A 14-item self-report measure focused on the main aspects of the treatment regimen for type 1 diabetes. Many of the items are applicable to patients with type 2 diabetes.
	• **Primary Care Assessment Survey (PCAS)** [23,24,27] A questionnaire that has excellent measures properties in seven domains of care through 11 summary scales (total of 49 items): financial access (2), organizational access (6), longitudinal continuity (1), visit-based continuity (2), contextual knowledge of patient (5), preventive counseling (7), integration (6), communication (6), thoroughness of physical examinations (1), interpersonal treatment (5), and trust (8).

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
Personal Resources	
Priority Multi-level Indicator Set **13. Education/literacy/enablement** **14. Social support/caregivers** **15. Employment/socio-economic/health insurance**	• **Canadian Community Health Survey (CCHS)** [8] Updated annually (over 100 questions), the CCHS is a cross-sectional survey to collect information related to health status, healthcare utilization and health determinants for the Canadian population. The biennial survey includes healthy living and mental well-being.
All Indicators • Education/literacy/enablement • Social support/caregivers • Race and culture • Belief system • Employment status/ socio-economic/health insurance status • Confidence in self-management • Coping skills • Empowerment	• **The Diabetes Empowerment Scale (DES)**[18]**; (DES-SF)**[19] A valid and reliable measure (28-items) of diabetes-related psychosocial self-efficacy: managing the psychosocial aspects of diabetes, assessing dissatisfaction and readiness to change, and setting and achieving diabetes goals. Also available is an 8-item short-form that is a valid and reliable measure of overall diabetes-related psychosocial self-efficacy. • **Patient Enablement Instrument** [53] A valid 6-item questionnaire focusing on patient issues regarding ability to cope, understand and confidence in managing health.
HEALTHCARE DELIVERY LEVEL: prepared and proactive care teams in all THREE CARE LOCALES (practice, community and hospital) delivering effective, safe, responsive/patient-centered and accessible care	
Self-Management Support : oriented to enhancing patient knowledge, skills, and involvement	
Priority Multi-level Indicator Set	• **Assessment of Primary Care Resources and Supports for Chronic Disease Self-Management (PCRS)** [14,15]

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
16. Patient-centered self-management action plans **17. Health promotion and education** **All Indicators** • Documented assessment of health status, quality of life, health behaviours and lifestyle, personal resources, socio-economic status, race, and culture, and personal health goals • Shared decision making between patient/caregiver and provider (e.g. clinical protocol or procedures, internal forms or instruments, documentation) • Patient-centered self-management action plans to improve health status, enhance quality of life, reduce risk factors, and change health behaviours or lifestyle • Health promotion and education such as smoking cessation programs, access to personal health information, self-management skills enhancement programs (e.g. glucose, monitoring, foot care, diet, exercise), and knowledge of diabetes and CPGs • Provider satisfaction with interaction with the patient/caregiver • Related patient-level indicators described in detail below (e.g. participation in programs, enablement, empowerment, active self-management practices,	This 16-item tool for use by providers examines the self-management support available in primary care: patient support (8); organizational support (8). • **Assessment of Chronic Illness Care (ACIC)** [3,4] The ACIC QI tool is focused on the six components of the Chronic Care Model (CCM): healthcare organization (6 items); community linkages (3 items); self-management support (4 items); decision support (4 items); delivery system design (6 items); clinical information systems (5 items). Version 3.5 (total 34 items) includes the same six sub scales as version 3.0 plus 6 additional items that address how well a practice team or organization integrates the CCM elements. • **Audit and Best Practice for Chronic Disease (ABCD) Systems Assessment Tool (SAT)** [5], **One21seventy Systems Assessment Tool** [6] Based on and adapted from the ACIC, the ABCD health system assessment tool (total 32 items) was designed for use with health services for Indigenous Australian population: health systems organization of healthcare (3), links with community and with external services (4), self-management support (3), decision support (3), delivery system design (9), clinical information systems (5) and the integration of the CCM (5). This System Assessment Tool has evolved to Incorporate the structure, content and principles of the WHO Innovative Care for Chronic Conditions (ICCC) Framework. • **The Patient Perception of Patient Centeredness Questionnaire (PPPC)** [16,17] A valid 14-item questionnaire on four components: exploring both the disease and illness experience (4), understanding the whole person (1), finding common ground (9). Also available is a validated 9-item questionnaire with both a patient and a physician version. • **The Diabetes Empowerment Scale (DES)**[18]**; (DES-SF)**[19]

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
satisfaction)	A valid and reliable measure (28-items) of diabetes-related psychosocial self-efficacy: managing the psychosocial aspects of diabetes, assessing dissatisfaction and readiness to change, and setting and achieving diabetes goals. Also available is an 8-item short-form that is a valid and reliable measure of overall diabetes-related psychosocial self-efficacy.
	• **Self-Care Inventory (SCI) – type 1 diabetes children and adolescents** [20]**; Self-Care Inventory Revised (SCI-R)**[21] A 14-item self-report measure focused on the main aspects of the treatment regimen for type 1 diabetes. Many of the items are applicable to patients with type 2 diabetes. There is support for validity and reliability of a 15-item SCI-R for use with patients with type 1 and type 2 diabetes.
Delivery System Design: oriented to maintaining or restoring health for individuals and groups	
Priority Multi-level Indicator Set **18. Effective and safe systems or structures** **19. Focus on patient-centered care and patient interactions** **20. Alignment of services and continuity of care**	• **Assessment of Chronic Illness Care (ACIC)** [3,4] The ACIC QI tool is focused on the six components of the Chronic Care Model (CCM): healthcare organization (6 items); community linkages (3 items); self-management support (4 items); decision support (4 items); delivery system design (6 items); clinical information systems (5 items). Version 3.5 (total 34 items) includes the same six sub scales as version 3.0 plus 6 additional items that address how well a practice team or organization integrates the CCM elements.
All Indicators • Existence of accessible, effective and safe system or structures (e.g. wait times) • Application of evidence-based clinical processes and disease management (e.g. protocol/procedures/ strategies) including adherence to CDA CPGs related to the frequency of testing or doing exams for: A1C test; Blood pressure (systolic and diastolic) test; Cholesterol	• **Audit and Best Practice for Chronic Disease (ABCD) Systems Assessment Tool (SAT)** [5]**, One21seventy Systems Assessment Tool** [6] Based on and adapted from the ACIC, this health system assessment tool was designed for use with health services for Indigenous Australian population: health systems organization of healthcare, links with community and with external services, self-management support, decision support, delivery system design, clinical information systems and the integration of the CCM. This System Assessment Tool has evolved to Incorporate the structure, content and principles of the WHO Innovative Care for Chronic Conditions (ICCC) Framework.

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
(LDL, TC:HDL-C) test; CKD (Serum Creatinine, Glomerular filtration rate, ACR) test; Electrocardiogram test; Foot exam; Eye exam, Neuropathy; Body mass index measurement; Waist circumference measurement; Depression screening • Effective team structure, composition and function • Focus on patient-centered care and patient interactions (i.e. patient is an active partner) • Effective planned visits (individual and groups) • Population level health promotion, disease prevention and disease detection such as programs targeting high risk individuals or sub-groups (e.g. poor, aboriginal, immigrant, etc.), reducing inequities in the risk of developing diabetes, strategies to facilitate early identification of undiagnosed diabetes • Alignment of services for ease of patient navigation and continuity of care • Commitment to quality improvement (e.g. QI committees/meetings/strategies) including practice re-design to improve effectiveness and efficiency • Existence of relationships/partnerships with community members and other stakeholders to identify patient needs, build adequate knowledge and skills, contribute to creating proper conditions for health in society and advocates for public health policy • Related patient-level indicators described in detail below (e.g. care utilization, adherence to treatment plan, health status – A1C, BP, LDL, macrovascular/ microvascular complications, medication usage, hospital visits/stays, patient experience/ satisfaction, etc.)	• **National Physician Survey** [7] A questionnaire (revised annually; about 50 questions) to measure elements related to physician practice: demographics, patient care settings, patient access to care, practice/work profile, allocation of time, professional income, changes in practice, use of information technology, professional satisfaction, chronic disease management. • **Primary Care Assessment Tool (PCAT)** [22-24] An instrument to assess performance of primary healthcare in four domains: first contact, person-focused care over time, comprehensiveness and coordination. In addition there are scales for community orientation, family-centeredness, cultural competence, and short section for demographics, insurance, and health status. The tool can capture the perspective of users, practitioners, and systems. • **Assessment of Primary Care Resources and Supports for Chronic Disease Self-Management (PCRS)** [14,15] This 16-item tool for use by providers examines the self-management support available in primary care: patient support (8); organizational support (8). • **Team Effectiveness Tool (TET)** [10,11] Currently under development, this 35-item tool assesses key dimensions of team effectiveness: team purpose and visions (4), roles (6), communication (9), service delivery (5), team support (6), and partnerships (5). • **Team Climate Inventory; Short-form Team Climate Inventory** [12,13] A five-factor, 38-item instrument measuring important aspects of five specific work climate factors for innovation: vision, participant safety, support for innovation, task orientation and interaction frequency.

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
	• **Shared Care Assessment Schedule (SCAS)** [25] A 13-item questionnaire on provider roles in shared care, communication, responsibilities, and satisfaction.
	• **Learning Scale in Primary Care** [26] Currently under development, this new 22-item learning scale and a 5-item sub-scale measures reciprocal learning among members in primary healthcare clinics in relation to the chronic care model.
Provider Decision Support: oriented to improving the knowledge and skills of providers and administrators	
Priority Multi-level Indicator Set **21. Routine feedback reports** **22. Evidence-based guidelines embedded into daily practice** **All Indicators** • Evidence-based guidelines (e.g. CPGs and strategies for being well and staying healthy) embedded into daily practice • Provider and administration education (e.g. programs available, program attendance, allocated time for professional development • Existence of relationships/partnerships among providers and administrators from the different locales of care (e.g. primary care, specialists, public health, community care) • Clinical care and client management tools (e.g. flow sheets, registry, and patient assessment/ disease severity	• **Assessment of Chronic Illness Care (ACIC)** [3,4] The ACIC QI tool is focused on the six components of the Chronic Care Model (CCM): healthcare organization (6 items); community linkages (3 items); self-management support (4 items); decision support (4 items); delivery system design (6 items); clinical information systems (5 items). Version 3.5 (total 34 items) includes the same six sub scales as version 3.0 plus 6 additional items that address how well a practice team or organization integrates the CCM elements.
	• **Audit and Best Practice for Chronic Disease (ABCD) Systems Assessment Tool (SAT)** [5], **One21seventy Systems Assessment Tool** [6] Based on and adapted from the ACIC, the ABCD health system assessment tool (total 32 items) was designed for use with health services for Indigenous Australian population: health systems organization of healthcare (3), links with community and with external services (4), self-management support (3), decision support (3), delivery system design (9), clinical information systems (5) and the integration of the CCM (5). This System Assessment Tool has evolved to Incorporate the structure, content and principles of the WHO Innovative Care for Chronic Conditions (ICCC) Framework.
	• **Primary Care Assessment Survey (PCAS)** [23,24,27]

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
tools that link indicators with recommendations for treatment or health behaviour change strategies) • Routine feedback reports regarding measurements, evaluation, performance	A questionnaire that has excellent measures properties in seven domains of care through 11 summary scales (total of 49 items): financial access (2), organizational access (6), longitudinal continuity (1), visit-based continuity (2), contextual knowledge of patient (5), preventive counseling (7), integration (6), communication (6), thoroughness of physical examinations (1), interpersonal treatment (5), and trust (8).
	• **Patient Assessment of Chronic Illness Care Instrument (PACIC)** [28,29] A 20-item self-report instrument to measure the extent to which patients with chronic illness receive care aligned with the CCM.
Clinical Information Systems: oriented to tracking, measuring, evaluating, and sharing health information	
Priority Multi-level Indicator Set **23. Systematic tracking of clinic data** **24. Effective use of multi-functional electronic/ medical/health records** **25. Access to health information - provider and patient portals** **All Indicators** • Existence of a diabetes registry • Systematic tracking clinic level data • Effective use of multi-functional electronic/medical/health record such as: patient tracking (e.g. clinical data, demographics, personal resources, socio-economic status, race, and culture, etc.); embedded CPGs/proactive care/ system reminders (i.e. support for care delivery); severity indicators with	**Canada Health Infoway Benefits Evaluation Survey** [30] Survey designed to provide an overview of available technology systems and features as well as the functionality of those systems related to supporting and facilitating healthcare delivery.
	• **Audit and Best Practice for Chronic Disease (ABCD) Systems Assessment Tool (SAT)** [5], **One21seventy Systems Assessment Tool** [6] Based on and adapted from the ACIC, the ABCD health system assessment tool (total 32 items) was designed for use with health services for Indigenous Australian population: health systems organization of healthcare (3), links with community and with external services (4), self-management support (3), decision support (3), delivery system design (9), clinical information systems (5) and the integration of the CCM (5). This System Assessment Tool has evolved to Incorporate the structure, content and principles of the WHO Innovative Care for Chronic Conditions (ICCC) Framework.
	• **National Physician Survey** [7] A questionnaire (revised annually; about 50 questions) to measure elements related to physician practice: demographics, patient care settings, patient access to care,

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
recommendations for treatment; performance feedback; practice 'success'; future goals • Patient treatment plans (e.g. plans that include self-management goals, clinical information, and appropriate next steps for follow-up) • Access to health information (e.g. provider portals, patient portals) • Linkages to support coordinated care and information exchange (e.g. allied provider access to patients' electronic charts)	practice/work profile, allocation of time, professional income, changes in practice, use of information technology, professional satisfaction, chronic disease management. • **Primary Care Assessment Tool (PCAT))** [22-24] An instrument to assess performance of primary healthcare in four domains: first contact, person-focused care over time, comprehensiveness and coordination. In addition there are scales for community orientation, family-centeredness, cultural competence, and short section for demographics, insurance, and health status. The tool can capture the perspective of users, practitioners, and systems.
ORGANIZATION OF HEALTHCARE LEVEL: healthcare system design and context that take into account the quality of care dimensions (effectiveness, safety, patient-centeredness, accessibility, efficiency and equity) and the determinants of health	
Priority Multi-level Indicator Set **26. Effective organizational and funding structure(s)** **27. Accountability related to quality of care and system performance** **28. Health service utilization patterns** **29. Accessible health services** **All Indicators** • Effective organizational and funding structures (e.g. physical space, supplies, staffing, funding models, incentives, alignment/linkages among locales of healthcare delivery • Healthcare policies, by-laws, regulations • Leadership commitment to chronic care approach (e.g.	• **Assessment of Chronic Illness Care (ACIC)** [3,4] The ACIC QI tool is focused on the six components of the Chronic Care Model (CCM): healthcare organization (6 items); community linkages (3 items); self-management support (4 items); decision support (4 items); delivery system design (6 items); clinical information systems (5 items). Version 3.5 (total 34 items) includes the same six sub scales as version 3.0 plus 6 additional items that address how well a practice team or organization integrates the CCM elements. • **Audit and Best Practice for Chronic Disease (ABCD) Systems Assessment Tool (SAT)** [5], **One21seventy Systems Assessment Tool** [6] Based on and adapted from the ACIC, the ABCD health system assessment tool (total 32 items) was designed for use with health services for Indigenous Australian population: health systems organization of healthcare (3), links with community and with external services (4), self-management support (3), decision support (3), delivery system design (9), clinical information systems (5) and the integration of the CCM (5). This System Assessment Tool has evolved to Incorporate the structure, content and principles of the WHO Innovative Care for Chronic Conditions (ICCC) Framework.

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
vision statements/mission statements/position papers, committees, management structures) • Leadership commitment to quality improvement (e.g. vision statements/mission statements/position papers, committees, management structures) • Accountability related to quality of care and system performance (Effectiveness, Safety, Patient-centeredness, Accessibility, Efficiency, and Equity) • Burden of illness and health services utilization patterns	
	• **National Physician Survey** [7] A questionnaire (revised annually; about 50 questions) to measure elements related to physician practice: demographics, patient care settings, patient access to care, practice/work profile, allocation of time, professional income, changes in practice, use of information technology, professional satisfaction, chronic disease management.
	• **Canadian Community Health Survey (CCHS)** [8] Updated annually (over 100 questions), the CCHS is a cross-sectional survey to collect information related to health status, healthcare utilization and health determinants for the Canadian population. The biennial survey includes healthy living and mental well-being.
	• **Organizational Readiness to Change Assessment (ORCA)** [9] Currently under development, this is a 20-item instrument to measure organizational readiness to change guided by core elements and sub-elements of the Promoting Action on Research Implementation in Health Services (PARHIS) Framework. The ORCA requires further testing and validation.
	• **Team Effectiveness Tool (TET)** [10,11] Currently under development, this 35-item tool assesses key dimensions of team effectiveness: team purpose and visions (4), roles (6), communication (9), service delivery (5), team support (6), and partnerships (5).

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
	• **Team Climate Inventory[12]; Short-form Team Climate Inventory** [13] A five-factor, 38-item instrument measuring important aspects of five specific work climate factors for innovation: vision, participant safety, support for innovation, task orientation and interaction frequency.
ENVIRONMENT LEVEL: prepared/proactive community partners and informed, activated communities to manage the non-medical determinants of health including socio- economic, living, and working conditions, as well as the social and physical environment	
Social and Physical Environment	
Priority Multi-level Indicator Set **30. Political/leadership commitment to establishing healthy and equitable socioeconomic, living and working conditions particularly for people with low socio-economic status, aboriginal peoples, immigrants, etc.**	• **Canadian Community Health Survey (CCHS)** [8] Updated annually (over 100 questions), the CCHS is a cross-sectional survey to collect information related to health status, healthcare utilization and health determinants for the Canadian population. The biennial survey includes healthy living and mental well-being.
31. Existence of accessible system or structures (e.g. housing, transportation, justice, employment) that are stable, secure, safe, and patient-centered (i.e. stimulating, satisfying, and enjoyable) **All Indicators** • Political/leadership commitment to establishing healthy and equitable socioeconomic, living and working conditions particularly among people with low socio-economic status, aboriginal peoples, immigrants, etc. • Existence of accessible system or structures (e.g. housing, transportation, justice, employment) that are stable, secure, safe, and patient-centered (i.e. stimulating, satisfying, and enjoyable)	• **Audit and Best Practice for Chronic Disease (ABCD) Systems Assessment Tool (SAT)** [5], **One21seventy Systems Assessment Tool** [6] Based on and adapted from the ACIC, the ABCD health system assessment tool (total 32 items) was designed for use with health services for Indigenous Australian population: health systems organization of healthcare (3), links with community and with external services (4), self-management support (3), decision support (3), delivery system design (9), clinical information systems (5) and the integration of the CCM (5). This System Assessment Tool has evolved to Incorporate the structure, content and principles of the WHO Innovative Care for Chronic Conditions (ICCC) Framework.

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
• Use of the system or structures (effectiveness) • Existence of relationships/partnerships among structures for continuity of care (e.g. linkages among community members/stakeholders and leaders/providers in healthcare) • Cost-effectiveness	
Community Action	
All Indicators • Knowledge and identification of risk behaviours and environmental (living and working) conditions • Community mobilization/public participation (e.g. shared vision, consensus at community level, community action) in activities to control non-medical factors that influence health • Existence of relationships/partnerships among community members/stakeholders (e.g. municipalities, advocacy groups, recreation centres, service clubs) and leaders/providers in healthcare, research, education, and other relevant realms to identify patient needs and build adequate knowledge and skills • Knowledge, skills and resources to participate in community action • Sense of empowerment in developing and implementing activities to manage the health of the community	

Priority and All-inclusive Multi-level Indicator Sets	**Measurement Tool**
Public Policy	
All Indicators • Existence of organizational and governmental policies and legislation that foster greater equity related to safer and healthier goods, services, and environments (e.g. dietary guidelines, reduced pricing for whole wheat products and fruits, government funded programs) • Evidence of community advocacy effort to develop new organizational and governmental policies and legislation in non-healthcare areas (housing, transportation and food distribution, education, employment, justice) that will enhance the health of the community (e.g. expert panels)	

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APPENDIX 4 - WORKSHEET: STAKEHOLDER LIST

Stakeholder Name	Title	Contact Information	Interested?
		Phone: Email:	YES / NO
		Phone: Email:	YES / NO
		Phone: Email:	YES / NO
		Phone: Email:	YES / NO
		Phone: Email:	YES / NO
		Phone: Email:	YES / NO
		Phone: Email:	YES / NO
		Phone: Email:	YES / NO
		Phone: Email:	YES / NO
		Phone: Email:	YES / NO

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APPENDIX 5 - WORKSHEET: STAKEHOLDER IDENTIFICATION AND ENGAGEMENT

Who are Stakeholders? Stakeholders are people who have 'a vested interest in the program, policy, or product being evaluated' and consequently have a stake in the evaluation (Mathison & American Evaluation Association, 2005). Stakeholders with diverse perspectives, expertise and backgrounds will help support comprehensive evaluation and will play important and diverse roles throughout the evaluation (Bowen, 2012; Bryson et al., 2011; Craig et al., 2013; Creswell JW, Klassen AC, Plano Clark VL, Smith KC for the Office of Behavioral and Social Sciences Research, 2011; Dubois et al., 2011; Song M.K. et al., 2010). To meet the goal of guiding comprehensive evaluation, it is important to be *inclusive* when selecting stakeholders to ensure the appropriate expertise and knowledge for progressing forward in the evaluation, and *selective* when identifying both the purpose of the evaluation, and the goals of the evaluation.

Identify your Stakeholders – Questions to Consider:

- Who are decision-makers or have authority over the program (policy makers, funders, advisory boards)?
- Who has direct responsibility for the program (developers, administrators, implementers, managers, staff)?
- Who are the intended beneficiaries of the program (health providers, families, communities)?
- Who are the primary users of the program?
- Who has specialized training or technical skills that will be beneficial for this evaluation (policy makers, healthcare professionals, researchers, evaluators, statisticians, etc.)?
- Consider anyone who makes decisions or desires information about a program (or the evaluation) or is affected by the program. Diverse and/or competing interests are important to consider when planning a comprehensive evaluation!

Who has the final say? Once you have established your stakeholder group, take the time to set some ground rules. Of course it is important to strive for consensus; however, if your group is truly heterogeneous, it may not always be possible. How does your group want to proceed? Elect one person to have the final say, define consensus as a certain percentage of the group such as 75% or 80%, or go to a voting style with majority rules. Whatever is decided, it is important to identify a leader for the evaluation and a person that is ultimately accountable for ensuring that the evaluation proceeds and that individual stakeholder perspectives are considered. Team agreements can be a great way to make things clear for the whole group. Things to include in your agreement are general principles related to friendliness, congeniality, encouragement and respect, inclusion, etc. Other agreement elements could include a communication strategy and approach to resolving concerns or challenges. Whatever you include in your team agreement, individual members of your group should have a clear understanding of expectations related to how the team is meant to function.

Engaging your Stakeholders

Stakeholders have the chance to influence the decision-making process; therefore it is important that no decisions are made before commencing stakeholder engagement on the evaluation. True stakeholder engagement means that the dialogue of stakeholders can legitimately influence the decisions that are made.

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APPENDIX 6 - WORKSHEET: UNDERSTANDING THE PROGRAM

Getting Started! Understanding the Program		
What is the program?		
What is the rationale/justification of the program?		
What is/are the target population(s) of the program?		
What are the objectives of the program?		
Getting Started! Developing Evaluation Questions		
	Question	Priority (high, medium, low)
What are the evaluation questions and how are they prioritized?		
Do you have everyone you need on your evaluation team?		

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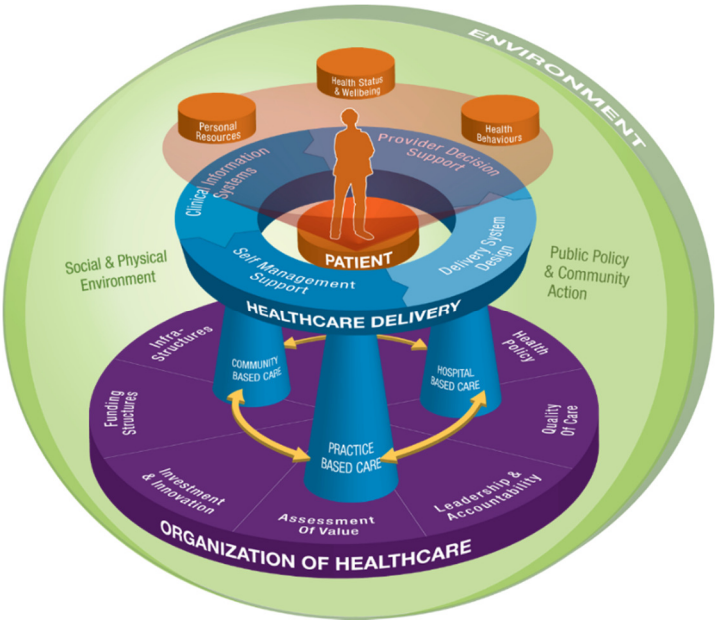
APPENDIX 7- WORKSHEET: INTERACTIONS AND CAUSAL LINKAGES



Working with stakeholders, explore the possible interactions and causal linkages between your program and its intended outcomes. Assess the multitude of possible interactions at the Patient level, Healthcare Delivery level, Organization of Healthcare level or Environment level between the program and the anticipated outcomes. What factors contribute to a patient's health and well-being that may be attributed to the program of interest? In other words, what are some of the possible causal linkages?

Mark below any determinants of health that you think play a role. It may be useful to write down specific examples or a description of your understanding of the interaction or causal linkages. For more information about the Determinants of Health Schematic and definition of the determinant categories you can visit http://tndms.ca or read *"Time to Evaluate Diabetes and Guide Health Research and Policy Innovation: The Diabetes Evaluation Framework (DEFINE)* [1]

Level	Determinant Category	Examples	Yes	No
Patient Level	Health Status & Well-being			
	Health Behaviours			
	Personal Resources			
Healthcare Delivery Level	Practice-based Care			
	Hospital-based Care			
	Community-based Care			
	Self-Management Support			
	Delivery System Design			
	Provider Decision Support			
	Clinical Information Systems			

Level	Determinant Category	Examples	Yes	No
Organization of Healthcare Level	Funding Structure			
	Infra-structures			
	Health Policy			
	Quality of Care			
	Leadership and Accountability			
	Assessment of Value			
	Investment & Innovation			
Environment Level	Social Environment			
	Physical Environment			
	Community Action			
	Public Policy			

1. Paquette-Warren J, Naqshbandi Hayward M, Tompkins J, Harris S. Time to evaluate diabetes and guide health research and policy innovation: The diabetes evaluation framework (DEFINE). *The Canadian Journal of Program Evaluation*. 2014;29(2):1-20. doi: 10.3138/cjpe.29.2.1.

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APPENDIX 8 - WORKSHEET: DEVELOPING A LOGIC MODEL

What is a logic model?

A logic model is a pictorial representation of what your program is intended to do. It typically includes resources, components, activities, target groups, and outcomes.

Why develop a logic model?

A logic model can help explain the rationale of program activities and display the links between activities and outcomes. In other words, it provides a visual representation of how the program is intended to work. This makes it a useful tool for communicating the elements of a program to policy makers, staff, funding agencies, the media, and colleagues.

How does a person develop a logic model?

There is no "right" way to create a logic model – you may find the easiest place to start is in the *middle.* Some people work from the top to the bottom of the page and some people like to work across a page like in this worksheet. Some people include components, target groups, outputs, and outcomes and some people list resources, activities, outcomes, and barriers. But, the important thing to remember is…

> *"Logic models are not rigid in their specifics. While the logic models used in evaluability assessment usually include resources, activities, outputs, and outcomes, logic models can be defined generally as flow charts that display a sequence of logical steps in program implementation and the achievement of desired outcomes."* [1]

1. Cooksy LJ, Gill P, Kelly PA. The program logic model as an integrative framework for a multimethod evaluation. *Eval Program Plann*. 2001;24(2):119-128.

<table>
<tr><td colspan="2">Program Goal(s):</td><td colspan="2">Target Population(s) (individuals, groups [i.e. adult patients with diabetes], community affected by the program, etc.):</td></tr>
<tr><td>Components (main activities of the program):</td><td>Activities (things done to reach desired outcome, services provided, etc.):</td><td rowspan="3">Short-term Outcomes (direct results of the program on the target population):</td><td rowspan="3">Long-term Outcomes (changes program hopes to achieve over a longer period of time):</td></tr>
<tr><td>Components (main activities of the program):</td><td>Activities (things done to reach desired outcome, services provided, etc.):</td></tr>
<tr><td colspan="2">External Factors:</td><td colspan="2">Resources dedicated to the program (supplies, equipment, money, staff, etc.):</td></tr>
</table>

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APPENDIX 9 - WORKSHEET: EVALUATION FEASIBILITY

Evaluation Feasibility

Goals, Questions, Tasks, Indicators, or Design/Methodology	Resources Required						
	Human Resources		Other Resources and Expenses			Time Resources	Feasibility?
	Who could do it?	Timeframe (how long will it take)?	Equipment, supplies, and administration	How much will it cost?	Are the funds available?	Can it be done on time?	
	❑ Internal _____ ❑ External _____						❑ Yes ❑ No
	❑ Internal _____ ❑ External _____						❑ Yes ❑ No
	❑ Internal _____ ❑ External _____						❑ Yes ❑ No
	❑ Internal _____ ❑ External _____						❑ Yes ❑ No
	❑ Internal _____ ❑ External _____						❑ Yes ❑ No
	❑ Internal _____ ❑ External _____						❑ Yes ❑ No
	❑ Internal _____ ❑ External _____						❑ Yes ❑ No
	❑ Internal _____ ❑ External _____						❑ Yes ❑ No
	❑ Internal _____ ❑ External _____						❑ Yes ❑ No
	❑ Internal _____ ❑ External _____						❑ Yes ❑ No
	❑ Internal _____ ❑ External _____						❑ Yes ❑ No
	❑ Internal _____ ❑ External _____						❑ Yes ❑ No

Adapted from the Public Health Agency of Canada – Program Evaluation Tool Kit
(http://www.phac-aspc.gc.ca/php-psp-toolkit-eng.php)

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APPENDIX 10- WORKSHEET: EXPANDING THE LOGIC MODEL

Program Goal(s):				
Activities	**Short-Term Outcomes**	**Short-Term Indicators** (data you need to gather)	**Source**	
			Data Source	**Type of collection method** (chart, questionnaire, telephone survey, focus group, individual interview, attendance sheets, activity log, etc.)

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APPENDIX 11- WORKSHEET: DISSEMINATION PLAN

Dissemination Plan		
What is/are the Knowledge Translation Goal(s) and Objective(s)?		
What are the key take-home messages of this evaluation?	**1.**	
	2.	
	3.	
Who is/are the target audience(s)?		
Are there any barriers to knowledge translation that should be considered? Consider resources that may be required!		
What type of tailoring is required to the language and/or materials?	**Language**	**Medium**

Dissemination Plan		
High Exposure **Low Exposure**	**Translation Approach**	**IDEAS**
	Publications	
	Conferences / Presentations	
	Training Session / Workshop	
	Meetings / Roundtables	
	Collaborative Practices	

Adapted from Appendix 2.2: Public Health Agency of Canada Knowledge Translation (KT) Planning Primer [1] Public Health Agency of Canada. Knowledge translation (KT) planning primer. 2012:1-22. http://publications.gc.ca/collections/collection_2013/aspc-phac/HP35-37-2012-eng.pdf. Accessed June 3, 2014.

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APPENDIX 12- WORKSHEET: KNOWLEDGE INTEGRATION

Questions to Consider:	**Brainstorming Notes**	**Take Action!** **What steps can we take to integrate our new knowledge and evaluation results?**
Other efforts in the field of diabetes that could be integrated with our evaluation results?		
Other initiatives/models/programs that would benefit from our evaluation results?		

APPENDIX 13 – PFH LOGIC MODEL

Partnerships for Health Project: "Right services - Right place - Right time - Right person!"

Activities	Approach	Short-Term Outcomes	Short-Term Indicators	Long-Term Outcomes
Project Management Team •Educate & support participants re: national practice guidelines, methods to redesign care process (CDPM framework, PDSA improvement model), & patient self-management •Provide opportunities/means for communication & linkages among participants •Support participants re: best use of existing technology, & prepare/train/educate them to adopt new technologies or e-health strategies •Assess/educate/train participants re: current and future state business processes •Create web-based tools to engage new providers to the project & sustain improvement efforts •Encourage participants to share lessons learned with in-house & external providers Health Care Team •Create core & improvement team which includes a CCAC case manager •Create partnership(s) with external providers •Provide opportunities for more timely access to clinically relevant information •Learn about national practice guidelines, methods to redesign care process (CDPM framework, PDSA improvement model, use of IT systems), & patient self-management •Collaborate with team members and external partners for coordinated care planning •Engage diabetes patients •Educate & train diabetes patients in self-management •Provide patients with tools to access own health information Patients •Detect problem •Seek help - Care utilization •Adhere to treatment plan	Project Management Team •Deliver learning modalities & networking opportunities to participants (Spread Collaborative, Knowledge Transfer Approach, Web-based Program, Practice-Coaching, Teleconferences) •Assess and improve current use of IT system •Position participants for the adoption of new IT & e-health strategies •Business processes mapping Health Care Team •Secure team members & external partners •Develop a communication strategy among team member s and external partners •Participate in learning modalities delivered by the Project Management Team •Record PDSA cycles •Collect relevant data •Submit monthly reports to Project Management Team •Involve team members and external partners in care planning when appropriate (group visits, pre-planned visits, referral visits) •Acknowledge and document patient self-management goals •Develop and deliver tools for patients to access own health information Patients •Recognise own health status & behaviours •Work with care team •Share with care team personal barriers, challenges, & preferences •Attend planned visits & referral appointments •Participate in educational activities •Acknowledge and agree with the treatment plan	Team Functioning •Improve access to CCAC case managers •Increase partnerships between primary care teams and external agencies •Increase confidence & positive attitudes re: clinical skills of self & others •Improve team interactions, capacity, improve knowledge of resources, & help patients navigate the system Care Processes •Improve knowledge of national practice guidelines, methods to redesign care process (CDPM framework, PDSA improvement model), & patient self-management •Better adherence to practice guidelines (increased testing and documentation of clinical process and outcomes) •Improve clinical decision making and care planning to enhance capacity (care coordination, integration of knowledge and skills, appropriate referrals, & emphasis on self management) •Increase early prevention & disease management (increased counselling with patients re: self-management practices/behaviours and setting self-management goals) •Improve link with providers/services external to practice when appropriate Clinical Outcomes •Larger proportion of patients with diabetes outcomes at guideline targets (HbA1c, BP, cholesterol, microalbumin, creatinine, GFR), •Larger proportion of patients prescribed antiglycemic, antihypertensive, lipid lowering, cardio-protective and/or depression medications Information Management •Advanced use of existing technology •Better ability to participate in quality improvement efforts including tracking key indicators & trends, monitoring adherence to practice guidelines •Ability to become early adopters of & align with e-health strategy(ies) •Build relationship for continued support and training within the community Patients' Role •Increased sense of being part of care team •Better knowledge of diabetes & participation in self-management •Increased access to health info & adherence to treatment plan •Enhanced empowerment/enablement & improved satisfaction with care Spread/Sustainability •Active strategies to share lessons learned within and external to the practice •Interest in applying lessons learned to other jurisdictions or diseases •Use of web-based tools for sustainability	Team Functioning •Interview, focus group, & survey data re: access to CCAC, partnerships, confidence & attitudes, and team interactions/capacity/systems/ resources Care Processes •Interview & survey data re: participants' knowledge of practice guidelines, methods to redesign care processes, and self-management •Interview, focus group, survey and chart review data re: increased adherence to practice guidelines • testing & charting of HbA1c, cholesterol, microalbumin/ creatinine, ECG, foot exams, eye exams, waist circumference, depression screening, and smoking status • treatment intensification for patients not at target (HbA1c, Blood Pressure, cholesterol) with the use of oral medications and insulin •Interview, focus group, & chart review data re: care planning to enhance capacity & care coordination • referrals to providers in-house including dieticians and diabetes educators • charting (or self-report) of patient visits to providers external to the practice •Interview, focus group, & chart review data re: early prevention & disease management • charting (or self-report) of self-management counselling and setting of self-management goals •Interview, focus group, survey & chart review data re: improved linkages with external providers/services • referrals to providers external to practice (CCAC, DEC, dietician, diabetes educator, diabetes specialist, foot specialist, optometrist, ophthalmologist, neurologist, nephrologist, urologist, internist) Clinical Outcomes •Chart review data re: patient's clinical values •Chart review data re: patient's prescribed medications Information Management •Interview & survey data re: use of existing technology •Interview, project documentation, & survey data re: quality improvement efforts •Interview data re: ability to adopt & align with e-health •Survey data re: local IT support Patients' Role •Focus group & survey data re: patients' sense of being part of a team, knowledge of diabetes/self-management, access to health info, adherence to treatment plan, empowerment/enablement, & satisfaction Spread/Sustainability •Interview data re: strategies for spread and sustainability internal and external to practice settings •Interview & project documentation data re: use of web-based tools NOTE: Participant observer, project documentation, & interview data re: project implementation (activities and approaches)	•Improve patient quality of life and decrease secondary complications •Increase service quality, decrease duplication of services, decrease inappropriate referrals •Create opportunities for research, influence future health planning, inform health policy •Decreased need for emergency care and hospitalizations •Decreased health care costs

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APPENDIX 14 – PFH TRIANGULATION MATRIX EXAMPLE

Partnerships for Health DIABETES CLINICAL MEASURES - RESULTS AND FINDINGS – TRIANGULATION MATRIX	
A) IMPROVED GENERAL HEALTH STATUS, QUALITY OF LIFE, AND MENTAL HEALTH	
CHART REVIEW DATA	**PROVIDER/ADMINISTRATOR INTERVIEWS**
General health status/quality of life/ mental health • No data available (not measured).	**General health status/quality of life/mental health** • Improvements in patient involvement and adherence to treatment, patient perceptions and knowledge regarding diabetes and self-management, teams approach and partnerships established for more seamless care and more efficient patient navigation of the system, and provider satisfaction were often listed as successes that are more important than clinical outcomes at this point in time and as elements that can only contribute to positive impact on clinical outcomes overtime (many). • Improved overall health and quality of life (many).
B) LARGER PROPORTION OF PATIENTS WITH DIABETES OUTCOMES AT GUIDELINE TARGETS (HBA1C, BP, CHOLESTEROL)	
CHART REVIEW DATA	**PROVIDER/ADMINISTRATOR INTERVIEWS**
Patients with diabetes outcomes at guideline targets • No significant increase in the proportion of patients at target HbA1c (≤7%). • Significant increase in the proportion of patients at 1) target BP (≤130/80 mmHg) and 2) target LDL (LDL ≤2.0 mmol/L). **Clinical Outcome Values** • Significant increase in HbA1c (i.e., post higher than baseline). • Significant decrease in HbA1c *in patients not at target HbA1c at end of baseline (>7%).* • Significant decrease in systolic and diastolic BP. • Significant decrease in systolic BP and diastolic BP *in patients not at target BP at end of*	**Patients with diabetes outcomes at guideline targets** • Improvement in patients' clinical measures, such as HbA1c, blood pressure, and cholesterol (most). • No improvement in some measures, yet no change when dealing with a progressively degenerative disease is a success in and of itself (some). • Barriers: 1) data quality and ability to capture accurate data (most); 2) the nature of diabetes as a progressive disease (some); 3) having very good numbers to begin with (some); 4) physician readiness and willingness to intensify treatment according to the guidelines (few); 5) seasonal effects (few); 6) reluctance to intensifying treatment for those patients who are

baseline (>130/80 mmHg). • Significant decrease in LDL cholesterol. • Significant decrease in LDL cholesterol *in patients not at target at end of baseline (>2 mmol/L).* • No significant decrease in BMI. • Note: same results were found for all of the above measures when missing post-data inputted from baseline.	close to target (some); 7) timing of the lab testing around the quarterly mark and when data are gathered (few); 8) population demographics (some); and 9) environmental factors (few).
C) LARGER PROPORTION OF PATIENTS PRESCRIBED ANTIHYPERGLYCEMIC, ANTIHYPERTENSIVE, LIPID LOWERING, CARDIO-PROTECTIVE AND/OR ANTIDEPRESSANT MEDICATIONS (INTENSIFICATION OF TREATMENT)	
CHART REVIEW DATA	**PROVIDER/ADMINISTRATOR INTERVIEWS**

Glycemic management/Intensification
• 42.1% (420) of patients had intensification of glycemic treatment at the end of the 12-month and 6-month post period, respectively (adding an oral, adding insulin, increasing the dose of an oral med, and/or increasing the total daily dose of insulin).
  • Of the *patients not at target HbA1c at the end of baseline (>7%),* 59.0% (226) of patients had intensification of glycemic treatment at end of the 12-month and 6-month post period, respectively.
• Significant increase in the 1) number of oral antihyperglycemic medications, 2) number of insulins, and 3) number of diabetes medications (oral and/or insulin) prescribed.
  • Significant increase in the 1) number of oral antihyperglycemic medications, 2) number of insulins, and 3) number of diabetes medications (oral and/or insulin) prescribed for *patients not at target HbA1c at the end of baseline (>7%).*
• Significant increase in patients' total oral antihyperglycemic medication score (summary score of 0.5 for less than ½ max dose and 1.0 greater than ½ max dose per oral antihyperglycemic medication).
  • Significant increase in patients' total oral antihyperglycemic medication score in *patients not at target HbA1c at the end of baseline (>7%).*
• Significant increase in the proportion of patients 1) prescribed an oral antihyperglycemic and 2) prescribed an insulin.
• Significant decrease in the proportion of patients on lifestyle only glycemic treatment.
Hypertension management/Intensification
• 33.9% (338) of patients had intensification of hypertension treatment at end of the 12-month and 6-month post period, respectively (adding an antihypertensive and/or increasing the dose of an antihypertensive).
  • Of the *patients not at target BP at the end of baseline (<130>80 mmHg),* 36.3% (204) of patients had intensification of hypertension treatment at end of the 12-month and 6-month post period, respectively.
• Significant increase in the number of antihypertensive medications prescribed.
	Intensification of treatment
	• Overall intensification of care (few).
	• Evidence of intensification of medications facilitated by new partnerships and improved team approach (few).

• Significant increase in the number of antihypertensive medications prescribed for *patients not at target BP at end of baseline (>130/80mm Hg).* • Significant increase in the proportion of patients 1) prescribed an antihypertensive medication and 2) prescribed an ACE/ARB medication. **Lipid management/Intensification** • 24.7% (247) of patients had intensification of lipid treatment at end of the 12-month post period (adding a statin, increasing the dose of a statin, and/or switched statin to atrovastatin or rosuvastatin). • *Of the patients not at target LDL at the end of baseline (>2 mmol/L),* 32.1% (183) of patients (W1/2) had intensification of lipid treatment at end of the 12-month post period and 6-month post period, respectively. • Significant increase in the number of statin medications prescribed. • Significant increase in the number of statin medications prescribed in *patients not at target LDL cholesterol at end of baseline (>2 mmol/L).* • Significant increase in the proportion of patients prescribed a statin medication. **Cardiovascular prevention management/Intensification** • Significant increase in the proportion of patients prescribed an ASA medication. **Depression management/Intensification** • Significant increase in the proportion of patients prescribed an antidepressant medication.	

LEGEND

Positive change; Negative/no change; Facilitators/Barriers to attaining desired outcomes

ABBREVIATIONS

ACE= Angiotensin converting enzyme; **ACR**=Albumin: Creatinine ratio; **ARB**=Angiotensin receptor blockers; **ASA**= Acetylsalicylic acid; **BP**=Blood pressure; **BMI**=Body mass index; **GFR**=Glomerular filtration rate; **HbA1c**=Glycated hemoglobin; **HDL**=High-density lipoprotein; **LDL**=Low-density lipoprotein; ***M***=Mean; ***Mdn***=Median; **W**=Wave